

# Quality of life, Education and Arctic resilience.

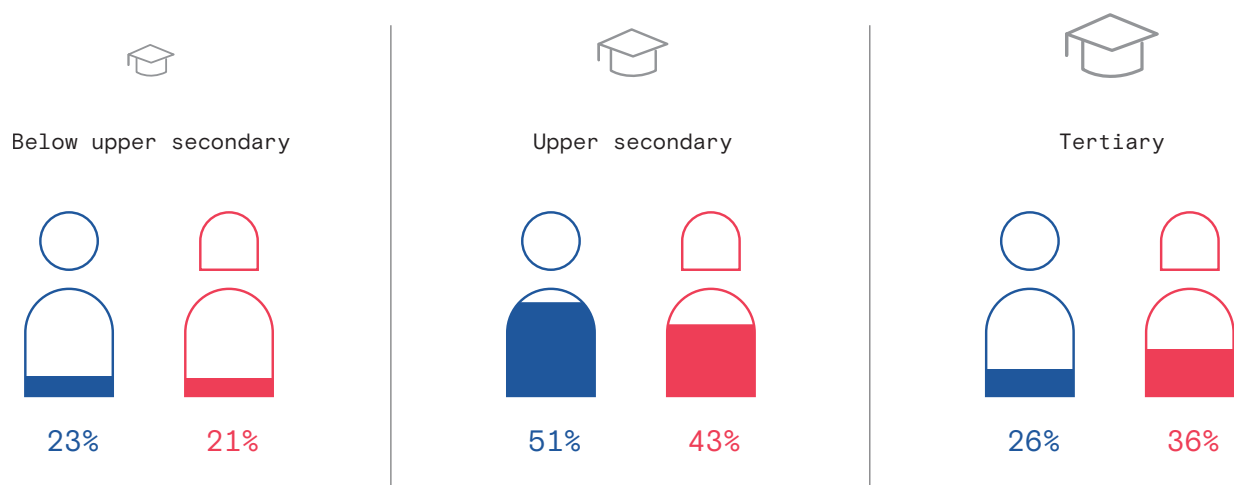
(02) —————

*Life and the North*



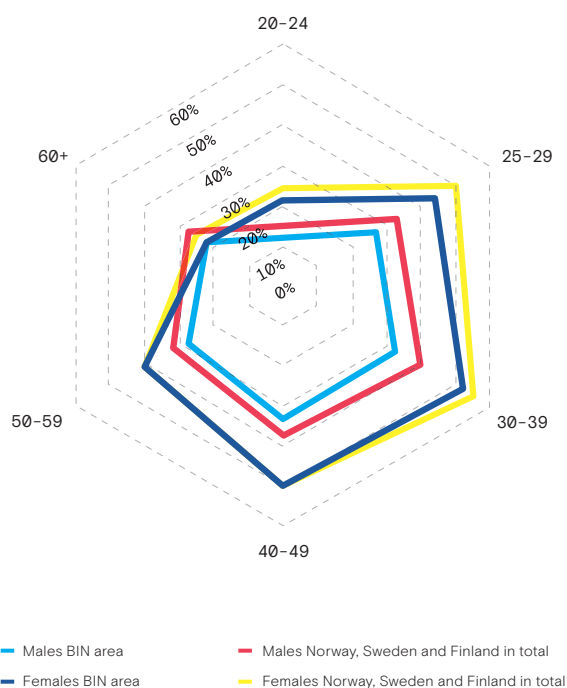
## Levels of education in the BIN area excl. Russia

2016



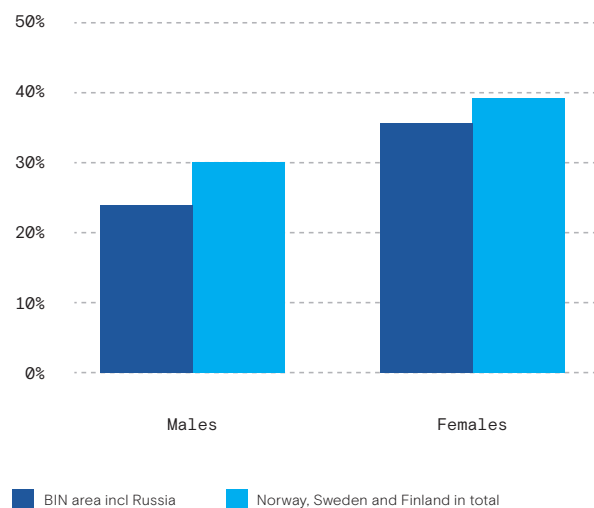
## Tertiary attainment of the population divided by age group

2016



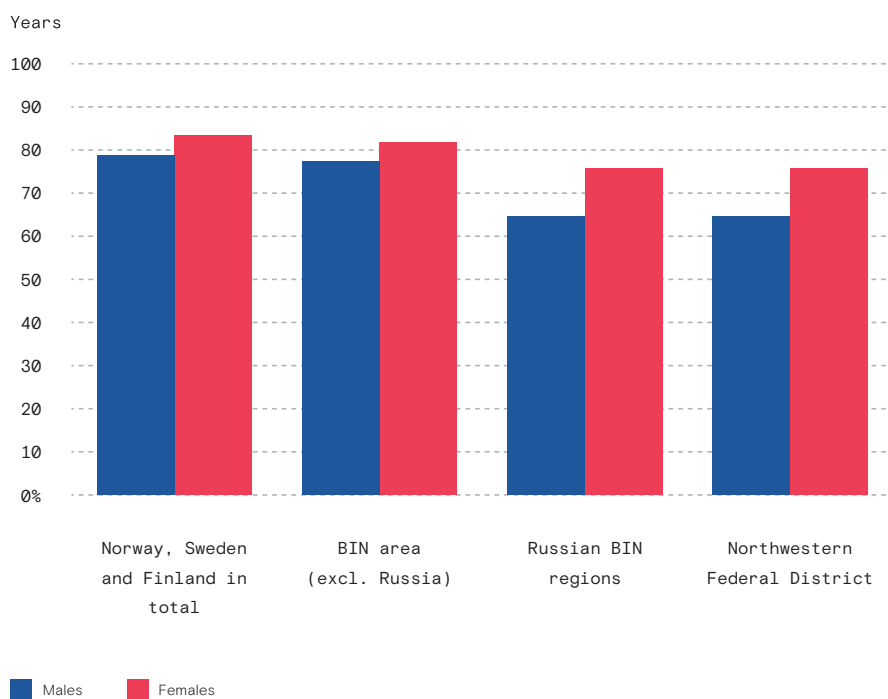
## Tertiary education attainment in the BIN area excl. Russia

2016



## Life expectancy at birth

2015



Section (02)

# Life and the North

Quality of life depends on individuals' wellbeing in a society. The concept of quality of life includes a number of subjective and objective dimensions of human existence. Subjective dimensions of life in the North include proximity to nature, work-life balance and Arctic resilience <sup>(1)</sup>.



Students at Regnbågsallén on Luleå University campus

Measurement of subjective dimensions requires further research on why people choose to live in the North. In this chapter, we employ objective indicators obtained from national statistics bureaus. Education, life expectancy and financial situation expressed as disposable income<sup>(2)</sup> are used as indicators affecting quality of life in the BIN area. These indicators are interdependent and the role of each is explained further. The Norwegian, Swedish and Finnish BIN regions share many similarities in quality of life indicators due to the historically strong welfare systems of the Nordic countries, low inequality measured by income distribution and universal access to education. The Russian BIN regions are affected by the Russian transition economy post 1990s with exacerbation of poverty and inequality expressed as income and mortality, combined by challenges in social welfare.

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## EDUCATION

Education affects individuals' quality of life in many ways; it predicts employment opportunities, earnings potential and reduces the risk of poverty. The level of education is fundamental in predicting individuals' health and life expectancy. We use level of educational attainment incorporating gender and regional perspective to examine the trends in education in the BIN area. Education attainment levels in this chapter are divided into below upper secondary, upper secondary and tertiary education attainment in population<sup>(3)</sup>.

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## LIFE EXPECTANCY

Life expectancy is influenced by many factors such as socioeconomic status, including employment, income, education and economic wellbeing. We use life expectancy at birth to refer to the mean number of years a newborn child can expect to live if subjected throughout his or her life to the current mortality conditions. Improvements in the educational attainment levels of populations also contribute to further improvements in life expectancy.

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## FINANCIAL SITUATION

The financial situation relates to the standard of living as expressed through income. Disposable income expresses the financial resources available for spending (or saving) and determines ownership of (or access to) material goods and services

## Findings for 2008–2016:

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### TRENDS IN THE LEVEL OF EDUCATION

- The proportion of population with below upper secondary has declined in the BIN area (excl. Russia) by 4 percentage points for males and 6 percentage points for females, reaching 23% for males and 20% for females. This pattern is observed in all countries under investigation.
- Population with upper-secondary education forms the biggest group in the BIN area (excl. Russia) with 51% for males and 43% for females, the proportion of the male population with upper-secondary education has grown in the BIN area by 2 percentage points while it did not change for females.
- Population with tertiary education in the BIN area (excl. Russia) continued to grow at a rate of 6 percentage points for females and 3 percentage points for males.

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### GAP IN TERTIARY EDUCATION

- In 2016 BIN area population with tertiary education is lower by 5 percentage points for males and 3 percentage points for females than the corresponding figures for Norway, Sweden and Finland.
- In 2016 in the BIN area the gap in tertiary education attainment between females and males was 9.5 percentage points (35.6% versus 26.1%) with significant differences on the regional level.

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### LIFE EXPECTANCY

- Life expectancy differs across countries and regions and the Russian BIN regions had the lowest life expectancy.
- Life expectancy correlates with tertiary education attainment for male population.

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### FINANCIAL SITUATION

- All BIN Nordic regions had lower disposable (ranging from 4 to 10 percentage points) income per inhabitant than the corresponding country averages. In Russia, Murmansk region outperformed the Northwestern Federal District by 14 percentage points in disposable income per inhabitant due to the economic growth of the last few years.

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<sup>1</sup> Capacity for navigating change by adapting or reorganizing in response to stress and shocks in ways that maintain essential identity, function and structures. (Arctic Resilience Report 2016).

<sup>2</sup> Similar indicators have previously been used by Eurostat (2015) and Eurofound (2016) publications "Quality of life in Europe".

<sup>3</sup> Below upper secondary includes primary and lower secondary education levels. Upper secondary includes upper secondary and post-secondary non-tertiary education. Tertiary education includes all three levels of tertiary education Bachelor's, Master's and doctoral and equivalent (OECD classification).

Figure 1

— Males BIN area      — Males Norway, Sweden and Finland in total  
 — Females BIN area      — Females Norway, Sweden and Finland in total

### Proportion of population aged 20+ with below upper secondary education in the BIN area (excl. Russia), %

2008 – 2016

Figure 1 illustrates the proportion of population with below upper secondary education in 2008 – 2016. Educational attainment below upper secondary is considered a low level of education and has been proved to be associated with fewer economic resources and additional health risks. Male population with below upper secondary education decreased in the BIN area from 27% in 2008 to 23% in 2016. Female population in the BIN area with below upper secondary education decreased by 6 percentage points from 27% in 2008 to 21% in 2016. Both female and male population lagged behind the totals for Norway, Finland and Sweden by 1 percentage point. The trend is that the number of people with below upper secondary education is decreasing.

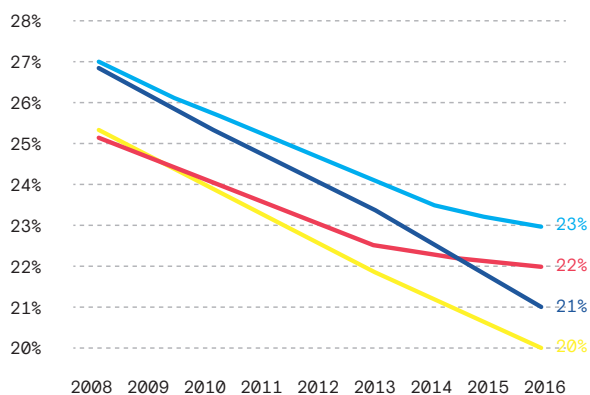


Figure 2

— Males BIN area      — Males Norway, Sweden and Finland in total  
 — Females BIN area      — Females Norway, Sweden and Finland in total

### Proportion of population aged 20+ with upper secondary education as their highest educational attainment in the BIN area (excl. Russia), %

2008 – 2016

Figure 2 shows that population with upper secondary education as their highest educational attainment was the biggest group in the period 2008–2016, cf. Figures 1 and 3. The indicator aims to measure the share of population likely to have the minimum necessary qualifications to actively participate in social and economic life. It should be noted that completion of upper secondary education could be achieved in European countries after varying lengths of study, according to different national educational systems. There are significant differences between males and females, with males' attainment in upper secondary education exceeding that of females by 6 percentage points in total in Norway, Finland and Sweden. The BIN area has significantly more males with upper secondary education as the highest qualification. Cf. 51% in 2016 for the BIN area and 46% total for Norway, Sweden and Finland.

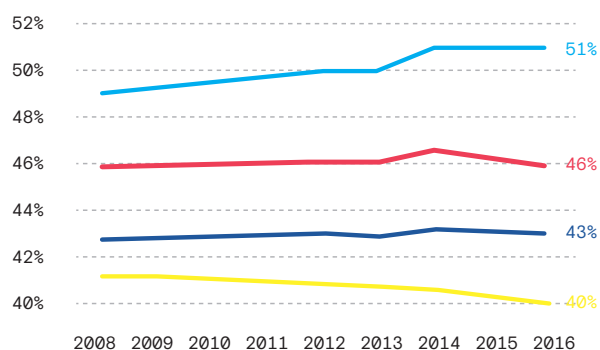


Figure 3

— Males BIN area      — Males Norway, Sweden and Finland in total  
 — Females BIN area      — Females Norway, Sweden and Finland in total

### Proportion of population aged 20+ with tertiary education as the highest educational attainment in the BIN area (excl. Russia), %

2008 – 2016

When looking at male and female tertiary educational attainment in 2016 in Norway, Sweden and Finland in total (Figure 3), women perform better than men in terms of tertiary education by 7.6 percentage points (38.7% versus 31.1%). In the BIN area, the gap in tertiary education attainment between females and males is much greater – 9.5 percentage points (35.6% versus 26.1%). Growth in male population with tertiary education in the BIN area was 3 percentage points during the period 2008–2016, while female population with tertiary education in the BIN area grew by 6 percentage points from 30% in 2008 to 36% in 2016. The values for both males and females in the BIN area are below the national values.

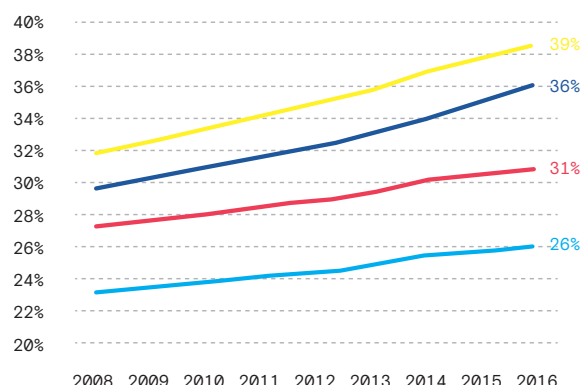


Figure 4

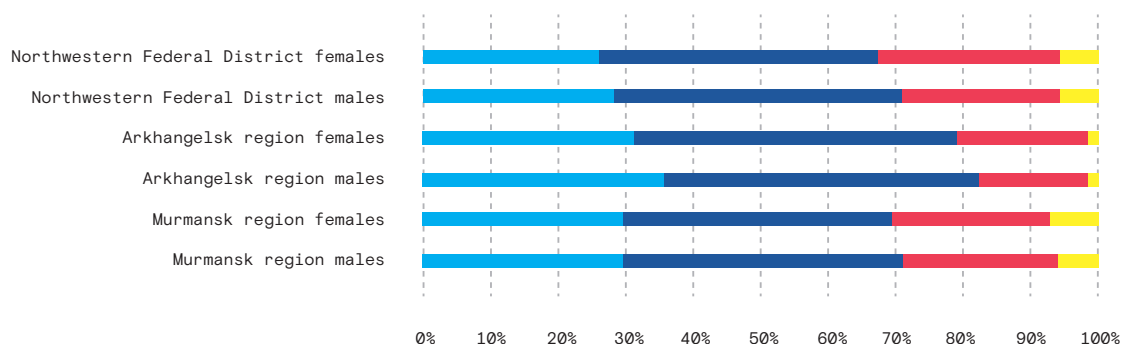
— Below upper secondary      — Upper secondary  
 — Tertiary education      — Unknown or not completed education

### Distribution of population aged 15 and older by highest educational attainment, %

2010

Figure 4 shows the educational attainment of the population in the Russian regions of Murmansk and Arkhangelsk (including Nenets Autonomous Okrug) and the Northwestern Federal District. Classification of educational level differs in the Russian and Nordic BIN due to reasons of comparability; all educational levels in Russia were classified into three major groups<sup>4</sup>. The data is only available for year 2010 when a population census took place.

The biggest group was upper secondary education holders at 47% of males and females in Arkhangelsk, in Murmansk 41% of females and 44% of males. Murmansk and Arkhangelsk regions lagged behind the Northwestern Federal District average in tertiary education attainment. In Arkhangelsk, 19% of female and 16% of males had tertiary education, in Murmansk 23% of females and 19% of males had tertiary education as their highest qualification.



Source: Data from Russian population census of 2010

<sup>4</sup> According to our classification in Russia less than upper secondary includes primary general, basic general and secondary (complete) general education. Upper secondary education includes basic vocational education, secondary vocational education and incomplete tertiary education (two years). Tertiary education includes university education (including Bachelor's, Master's, specialist and doctoral degrees) and post-university education.

Figure 5

2008 change 2008-2016

### Population aged 20+ with tertiary education, by gender 2008 – 2016, Norway, %

2008-2016

Figure 5 shows differences for males and females in tertiary education attainment for the Norwegian regions. Males have fewer tertiary education qualifications in all the Norwegian BIN regions, compare on average 20.5% in 2008 and 24.3% in 2016, while females had 28.0% and 35.5% for the same years. The regions of Nordland (23%) and Finnmark (22%) had the lowest proportion of male population with tertiary education as their highest qualification. Of the Norwegian BIN regions, Troms had the highest percentages of female (39%) and male (28%) population with tertiary education. The higher urbanization level in Troms Region with more jobs available for highly skilled workers can explain this. The growth in percentage points is very similar in the BIN regions and in Norway overall.

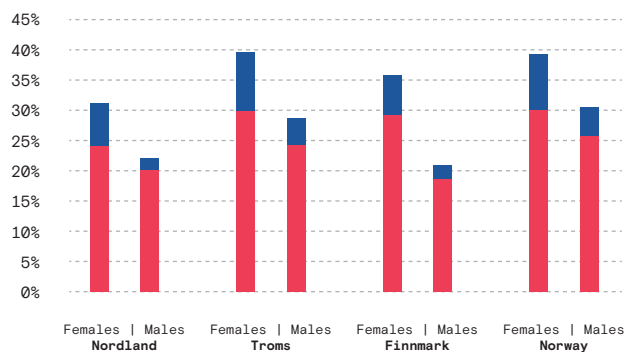


Figure 6

2008 change 2008-2016

### Population aged 20+ with tertiary education, by gender 2008 – 2016, Sweden, %

2008-2016

Figure 6 shows differences between males and females in tertiary education attainment in the Swedish regions. There are substantial difference across regions. In Norrbotten, 25% of the male population had tertiary education as also had 35% of the female population in 2016, while in Västerbotten the corresponding figures were 32% and 42%. The Västerbotten education attainment profile is similar to that of Sweden as a whole, while Norrbotten is lagging behind by 8 percentage points for males and 5 percentage points for females. Umeå University located in Västerbotten has a longer history and a wider range of programmes than Luleå Technical University in Norrbotten. This may explain the differences in tertiary education attainment in Västerbotten and Norrbotten.

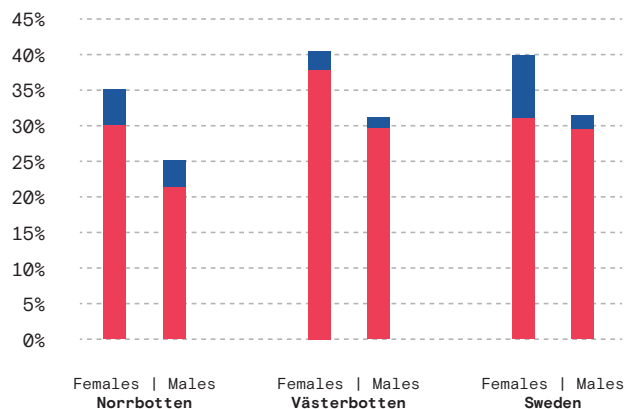


Figure 7

2008 change 2008-2016

### Population aged 20+ with tertiary education, by gender 2008 - 2016, Finland, %

2008-2016

Of the Finnish BIN regions Northern Ostrobothnia measured up against the country's average of 36% for females and 28% of males with tertiary education (Figure 7). The regions of Kainuu and Lapland lagged behind the total for Finland by an average 5 percentage points for females and 6 percentage points for males. Ageing population structure in these regions explains the gap in tertiary education.

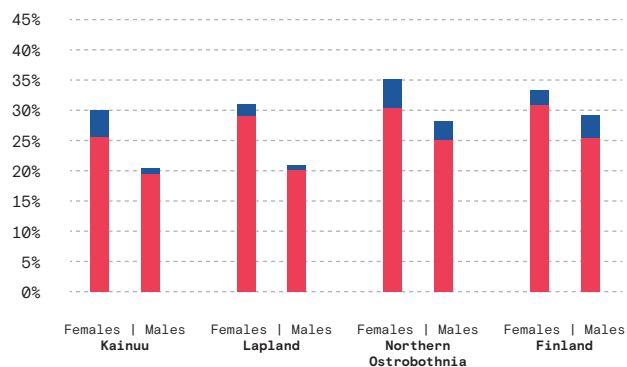


Figure 8

Males BIN area Males Norway, Sweden and Finland in total  
Females BIN area Females Norway, Sweden and Finland in total

### Tertiary attainment of the population divided by age group

2016

Figure 8 shows that tertiary education among the younger generations in 2016 was more common than among the older ones, with the highest numbers in groups aged 30-39 and 40-49. The proportion of women aged 30-39 with tertiary education in Norway, Sweden and Finland together amounted to 55.1%, with the BIN area lagging behind by 3 percentage points (55.2% in 2016). Males aged 25-29 (26.9%) and 30-39 (32.9%) with tertiary education lagged behind in Norway, Sweden and Finland in total by 6 percentage points. The lowest tertiary education attainment is observed in the age groups 20-24 and 60+.

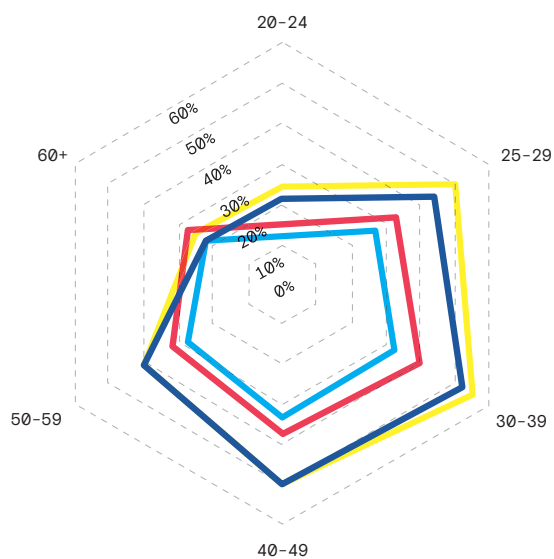


Figure 9

■ Males ■ Females

## Life expectancy at birth, boys/ girls

2015

Figure 9 shows that life expectancy is not equal between the two genders. On average girls born in 2015 in Norway, Sweden and Finland are expected to live 83.8 years, i.e. 4.5 years longer than boys born in 2015. In the BIN area, excluding Russia, women are expected to live till 83.4 years and men till 78.3 years, amounting to a discrepancy of 5.1 years in life expectancy. In Russia the life expectancy pattern is different from that in the Nordic BIN, with women's life expectancy in the Northwestern Federal District 76.8 years and men's 66.3 years (a discrepancy of 10.5 years in life expectancy). In the Murmansk (64.5) and Arkhangelsk (64.8) regions men are expected to live 2 years shorter than in the Northwestern Federal District (66.3).

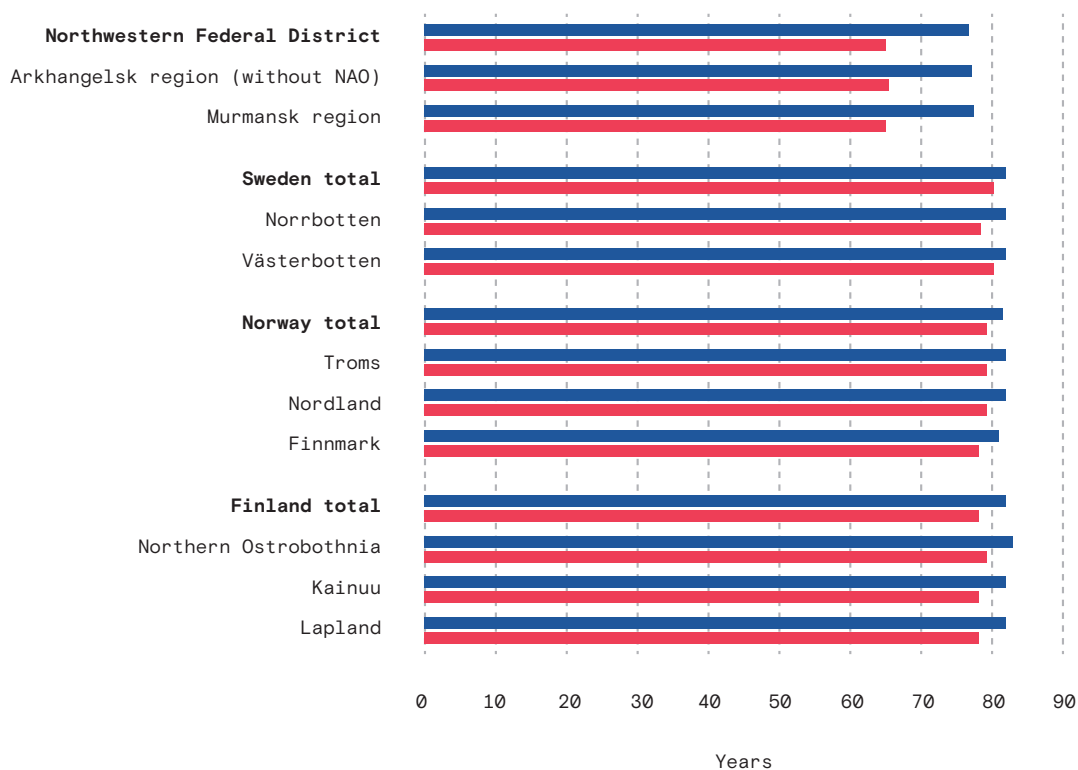


Figure 10

Change Males Change Females

### Change in life expectancy at birth, boys/girls

2005-2015

Figure 10 shows that the life expectancy of BIN residents at birth has increased improved in all BIN regions during the period 2005 to 2015. Life expectancy for men rose faster, increasing by as much as 9 years in Russia. In Norway, Sweden and Finland overall life expectancy for men rose by 2.6 years on average. Increases in life expectancy among men in the Nordic BIN regions can be attributed to improvements in levels of educational attainment. The slowest increase was observed in North Sweden with 0.8 years for females and 1.5 for males. In developed societies, improvements in life expectancy associated with higher levels of educational attainment are counteracted by health problems due to lifestyle diseases (e.g. atherosclerosis, heart disease, obesity and type 2 diabetes; and diseases associated with alcohol and drug abuse). The effect of lifestyle diseases on life expectancy in the BIN area deserves further investigation. The Russian BIN regions continue to lag behind the Nordic BIN regions in terms of life expectancy. In Russia, life expectancy has improved since 2003. However, this is a compensatory process; in 2013 life expectancy for the first time reached 70.8 years, the point it was at when the Soviet Union collapsed. The Russian government aims to raise national life expectancy to 76 years across the country by 2025.

Source: Eurostat statistics/NUTS2 level, Russian Federal State Statistics Service

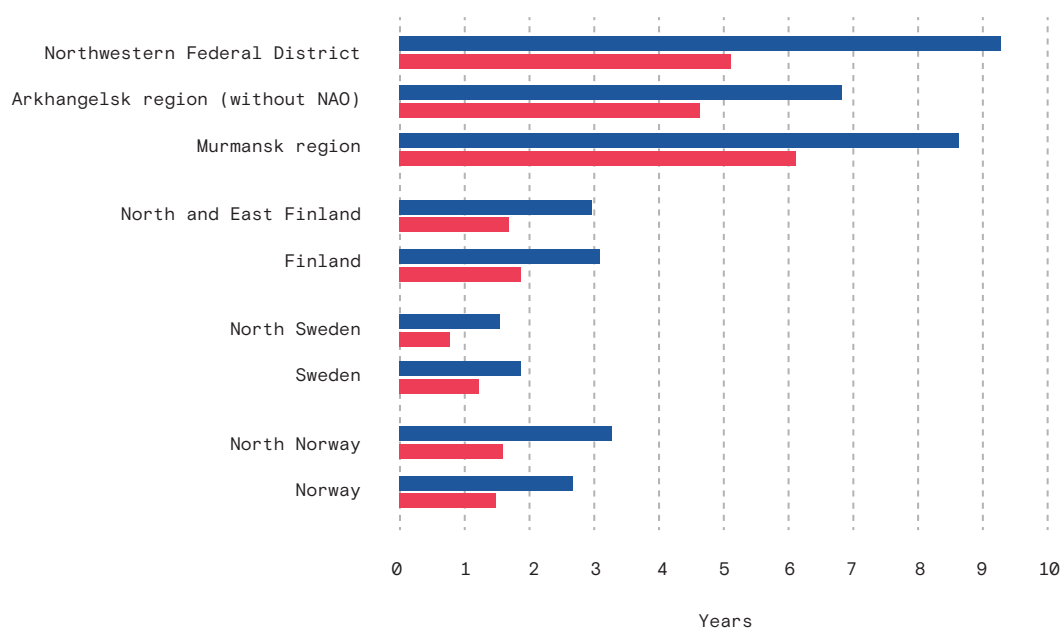


Figure 11

### Life expectancy at birth vs. tertiary education attainment, males

2016

Figure 11 illustrates potential correlations between tertiary education attainment and life expectancy for male population. It shows that the BIN regions can be broadly divided into three groups. Underperformers are those with lower life expectancy and less tertiary education attainment (Kainuu, Finnmark, Lapland). Moderate performers are those with longer life expectancy and moderate tertiary education attainment (Norrbotten, Northern Ostrobothnia). High performers are those with the longest life expectancy and highest tertiary education attainment (Västerbotten). The gap between underperformers and high performers is in the range of 3.5 life years and 11.2 percentage points in tertiary education attainment for males. At the same time, we observe that in Norwegian Nordland and Troms relatively low levels of tertiary education attainment do not result in decreased life expectancy at birth. This needs further attention to ascertain what other objective and subjective factors contribute to longer life expectancy in these regions.

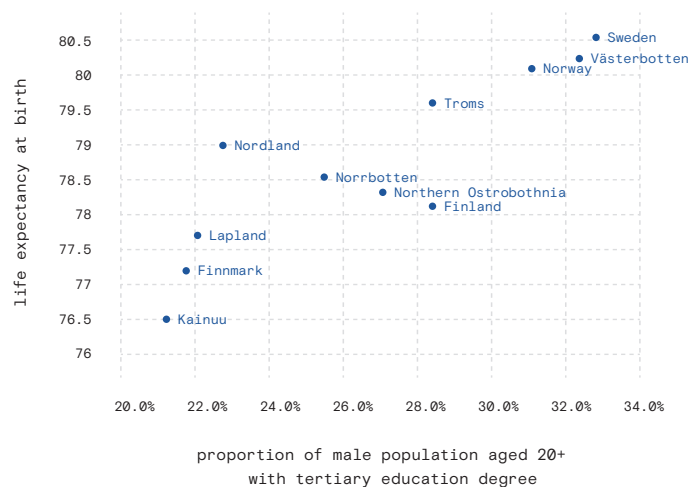


Figure 12

### Annual disposable income per inhabitant, euro

2015

Figure 12.1 depicts annual disposable income per inhabitant corresponding to the sum of wages and salaries, mixed income, net property income, net current transfers and social benefits other than social transfers in kind, less taxes on income and wealth and social security contributions paid by employees, the self-employed and the unemployed. Disposable income, as a concept, is closer to the idea of income as generally understood in economics, than is either national income or gross domestic product (GDP). In 2015, Norway had the largest annual disposable income of 29,098 euros per inhabitant, followed by Sweden (21,797) and Finland (21,797). In Russia, disposable income per inhabitant in Northwestern Federal District amounted to 5,699 euros.

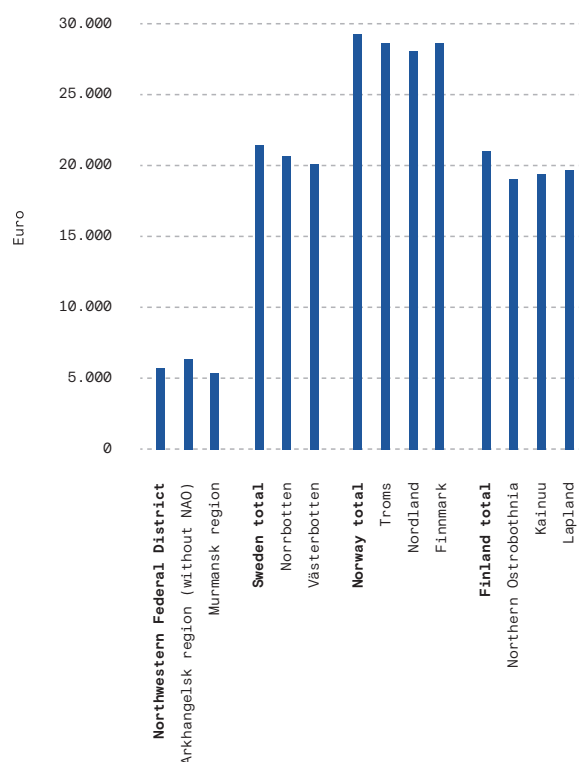


Figure 12.2

### Disposable income per inhabitant relative to country average

2015

Figure 12.2 illustrates disposable income per inhabitant relative to the country's average in 2015. All BIN Nordic regions had lower disposable income per inhabitant (ranging from 4 to 10 percentage points) than their corresponding country averages. In Russia, the Murmansk Region outperformed the Northwestern Federal District by 14 percentage points in disposable income per inhabitant. This is explained by the economic growth in the Murmansk Region fueled by the metal industry and the industrial production of apatite concentrate used as a raw material for phosphate fertilizers. It is worth noting that these differences do not represent the full picture since the cost of living differs in the northern, southern and metropolitan regions. Comparison that is more meaningful requires calculation of discretionary income that accounts for paying for personal necessities, such as food, housing and clothing. There is currently no data on the national statistic level for all BIN area allowing enabling us to present discretionary income.

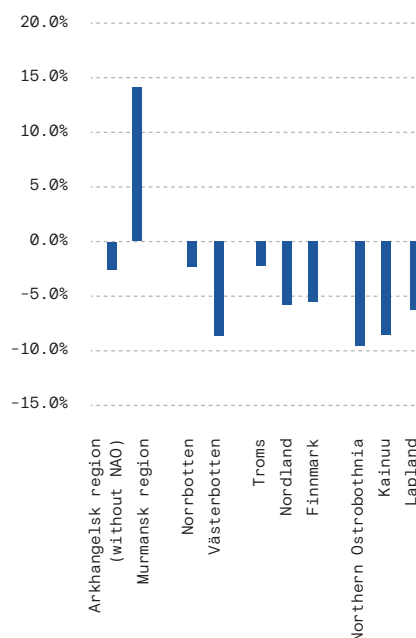


Figure 13

### Disposable income vs life expectancy, males

2015

Figure 13 seeks a possible correlation between disposable income and life expectancy for males in 2015. The differences in life expectancy values are not too big – maximum three years. Lower disposable income is associated with shorter life expectancy, e.g. in Kainuu, life expectancy in 2015 for males was 76.5 years and annual disposable income was 19,000 euros. Disposable income over 27,000 euros is associated with longer life expectancy at birth in Nordland and Troms. However, disposable income of 27,000 does not correspond to higher life expectancy in Finnmark and likewise lower disposable income in Västerbotten (less than 20,000) correlates with longer life expectancy in males. Therefore, it is important to take account of such factors as education, health and life-style of the population.

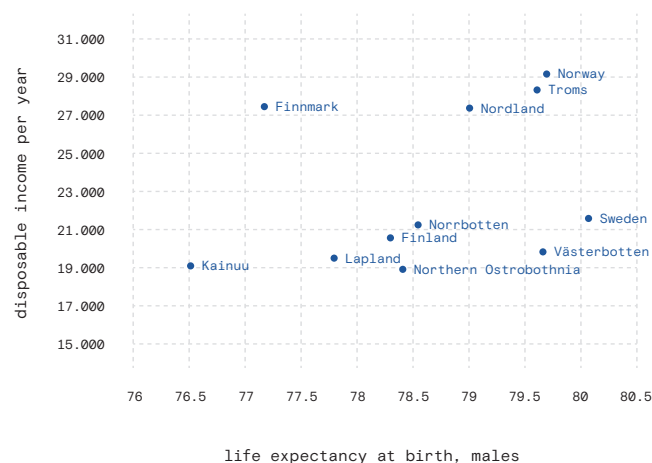
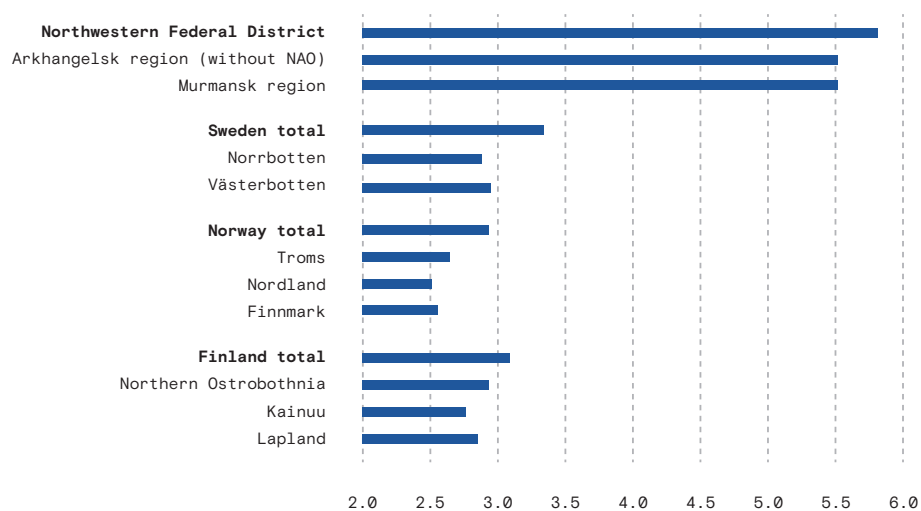


Figure 14

### Income inequality - ratio of income level of 10% of the richest and 10% of the poorest

2016

Figure 14 illustrates the ratio of disposable incomes at the top (90th percentile) versus the bottom (10th percentile) of the population. The higher the ratio the greater the inequality. The greatest income inequality is observed in Russian BIN regions, 5.5 in the Murmansk and Arkhangelsk regions. Historically, the Nordic countries have performed well in income inequality, the ratio being top in the OECD countries, with the highest ratios only 3.31 in Sweden while the USA, for example had a ratio of 6.1 in 2015. Of the BIN area, Norway and its BIN regions appear to be the best performers. Overall, the BIN regions perform better in income inequality ratio than its subsequent countries. This can be explained by lower tertiary education attainment in the male population men and lower disposable income in these regions. The trends in the inequality ratio would be a good indicator of how situation changes regarding poverty and inequality.



# Challenges and findings

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## Recommendations

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### For Policy

- A** Improve the quality, diversity and accessibility of tertiary education in the BIN region
- B** Increase the number of young men with tertiary education
- C** Create conditions for young women to move back home after getting tertiary education
- D** Increase disposable income to make it attractive to move to the North
- E** Address the link between life expectancy and education
- F** Measure both objective and subjective quality of life on the regional level
- G** Implement policies based on the European Pillar of Social Rights<sup>6</sup> that includes among others public support /social protection and inclusion
- H** Provide affordable housing that decisively influences material living conditions

The population of the BIN area lags behind the respective national averages in tertiary education attainment, life expectancy and disposable income. Policy-makers should consider how to increase number of young men completing tertiary education and create attractive living conditions for highly educated women in the BIN area. Further increasing automation of basic manual work would require skilled workers.

### For businesses

- A** Develop services supporting quality of life, inclusion
- B** Harness the potential of the educated female population

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<sup>6</sup> [https://ec.europa.eu/commission/priorities-deeper-and-fairer-economic-and-monetary-union/european-pillar-social-rights\\_en](https://ec.europa.eu/commission/priorities-deeper-and-fairer-economic-and-monetary-union/european-pillar-social-rights_en)